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Problems Evaporating at Magcorp

By Joe Rolando
Tribune Business Writer

Nearly 3½ years ago, AMAX Magnesium Corp. watched helplessly as the Great Salt Lake — at its "modern historic high" level of 4,211.85 feet — washed away the outer north dike protecting its solar mineral-extraction evaporation ponds in the Stansbury Basin.

AMAX had been manufacturing about 36,000 tons of magnesium a year with a work force of slightly more than 700. The breach left the company's future in doubt.

But its quick moves, including a sizable investment, to relocate its solar ponds north of Knolls, Tooele County, prevented its demise.

Company spokesman Lee Brown observed, "Everybody sacrificed during this rebuilding period as wages were frozen and concessionary bargaining was concluded with the United Steelworkers union representing our operating and maintenance employees."

The sacrifice was not without reward.

The new solar ponds provide the company — now known as Magnesium Corporation of America or Magcorp after its Aug. 31 acquisition by New York City-based The Renco Group Inc. — with a 10-year supply of magnesium chloride brine, said Mr. Brown.

That's possible because the ponds are located in the southeast corner of what is known as the "west pond" into which the state's $60 million west deseret pumps diverted the rising waters of the Great Salt Lake.

Mr. Brown said although the state has since halted pumping because of the lower lake level, leaving little if any water in the "west pond," the company's solar ponds are storing about 5 to 6 feet of brine.

Magcorp transports the brine to its Rowley, Tooele County, plant through a 41-mile underground pipeline its predecessor built.

Mr. Brown declined to say how much AMAX paid to build the Knolls ponds and related facilities, including the 41-mile pipeline, because of the keen competition among magnesium producers. He would say only the amount was "significant."

Mr. Brown said particularly helpful to AMAX in building the Knolls ponds were the U.S. Air Force, the Division of State Lands and Forestry and the Bureau of Land Management. The first issued the state the necessary permit to pump the Great Salt Lake and the latter two provided AMAX the leases for land on which the new ponds were built.

Most of the 59,000 acres AMAX needed for the solar evaporation facilities are administered by the BLM, said Mr. Brown.

Generally, brine is water saturated or strongly impregnated with various mineral salts. Magcorp's interest is in only the magnesium chloride which it recovers by selective evaporation. From it, the company produces magnesium and chlorine.

The raw brine is first moved into holding ponds for storage before being transferred to concentrating ponds where various salts drop out at different times depending on their concentrations.

When the magnesium chloride concentration reaches a certain point, it is moved into a final holding pond for transportation to the plant via the 41-mile underground pipeline. (Magnesium chloride is the last salt to drop out of the brine solution.)

Mr. Brown said, "Today, through improved efficiency and cost effective measures we have been able to bring our annual production of magnesium up to maximum levels of between 36,000 and 38,000 tons with about 600 people."

Magcorp is now selling over $100 million of magnesium a year "in national and overseas markets outside Utah," said Mr. Brown. "So seriously, it was really a godsend for the state of Utah to make the decision to pump the Great Salt Lake when it did. If it hadn't, this [Magcorp's $100 million in annual sales and 600 jobs] wouldn't exist today."

Dave Buehler, northern regional manager for the Division of State Lands and Forestry, said the state benefits from Magcorp's production in the form of lease and royalty revenues. He said because the state owns the lake's water and minerals, it realizes all the royalty revenue Magcorp pays, even if the bulk of the company's solar ponds are on BLM land.

Mr. Brown said because of the state's foresight in building the pumps, it and local government are the recipients of taxes as well as lease and royalty revenue. He said before the breach of its north dike in 1986, AMAX was paying state and local entities about $4.5 million in taxes and lease and royalty fees.

"Realistically, this facility is going to pay for the west deseret pumping facility by itself in six to seven years," said Mr. Brown, adding Magcorp is also still paying the leases to the state and BLM on its Stansbury Basin ponds.

After the breach of its north dike in 1986, AMAX's work force of more than 700 dropped as low as 424 before the year's end. The company said it had to cut its work force to reduce short-term losses while continuing to review its options.

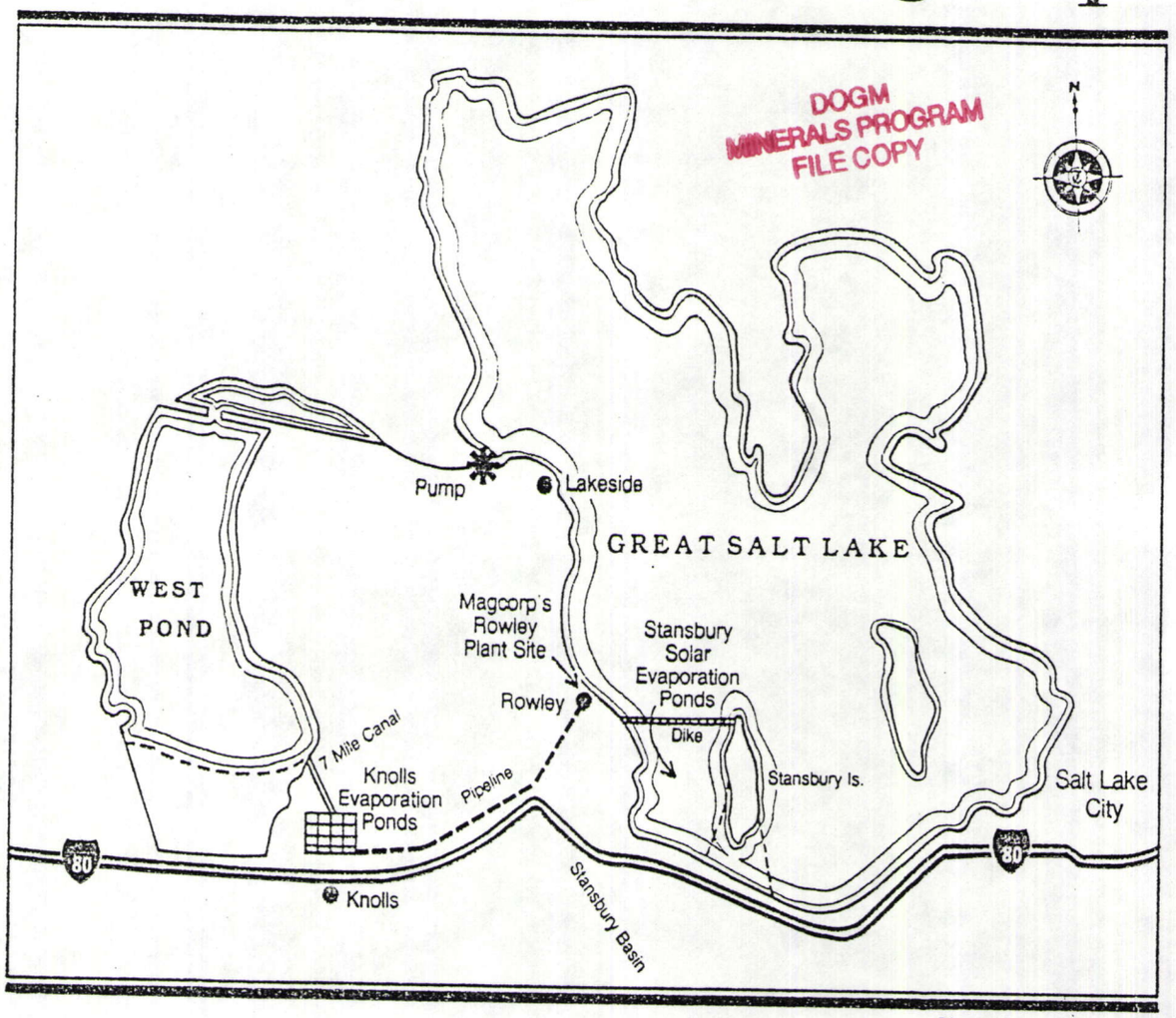
Between the time AMAX's north dike was breached and the completion of the Knolls solar ponds and 41-mile pipeline, the company transported brine by truck to its Rowley plant from Wendover and by rail from Leslie Salt's operation in the San Francisco Bay Area, said Mr. Brown.

He said the 10-year supply of brine in the Knolls ponds gives Magcorp some "breathing room" to decide whether to return to the Stansbury Basin and rebuild the breached north dike. He added, "I think the decision will be put off until the company has a better feel for what the lake is going to do."

But Mr. Brown conceded that predicting precipitation levels is no simple feat.

To return to the Stansbury Basin for brine now that the lake level has dropped to 4,204.5 feet, Magcorp would have to make a substantial expenditure to close the breach in the north dike and repair the diking system, said Mr. Brown.

And, he said, if the lake should ever again rise to the "modern historic high" of 4,211.85 feet, it would become extremely expensive to maintain the 13-miles of the north dike.



—Tribune Map by Mark Knudsen

Magcorp's Rowley plant on Great Salt Lake is shown in relation to the Stansbury Basin ponds it abandoned after a breach of north dike and its new Knolls ponds to the west.